

Corson (H)

FOOD FOR INFANTS.

BY
HIRAM CORSON, M. D.,
OF MONTGOMERY CO, PENNSYLVANIA.

REPRINTED FROM THE
NORTHWESTERN MEDICAL AND SURGICAL JOURNAL.



SAINT PAUL:
PIONEER PRINTING COMPANY.

1870.

FOOD FOR INFANTS.

BY

HIRAM CORSON, M. D.,

OF MONTGOMERY CO., PENNSYLVANIA.

REPRINTED FROM THE
NORTHWESTERN MEDICAL AND SURGICAL JOURNAL.

SAINT PAUL:

PIONEER PRINTING COMPANY.

1870.

FOOD FOR INFANTS.

THE FOOD FOR INFANTS.

BY HENRY L. LORAN, M.D.

OF THE UNIVERSITY OF CHICAGO.

The Food for Infants is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician.

The Food for Infants is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician.

The Food for Infants is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician.

The Food for Infants is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician.

The Food for Infants is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician.

The Food for Infants is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician. It is a book which will be of great value to the mother and the physician.

FOOD FOR INFANTS.

BY HIRAM CORSON, M. D.

If it be an important duty to check disease and stay the hand of death in the aged, whose genius and talents have been already exercised for the good of their country, who at furthest can live but a few years longer, and who are bound to life by few ties, how much more important to preserve the lives of children in whom are centered the hopes and affections of fond parents, and all of whose powers are ready to develop themselves for the joy of their parents, the glory of their manhood, and the benefit of human society. They are to supply the places of those worn out in the service of mankind, and yet how lightly we regard their early death. They die by thousands for want of proper nourishment. Even the best of mothers, through ignorance of the proper mode of treatment, see them pine and die, though the keenest affection watches night and day over the cradle.

In Burns' work on the Diseases of Women and Children, edited by Professor Thomas C. James, in 1823, he says: "Some mothers can not, and others will not, suckle their children, but employ another nurse, or bring up the child on the spoon. If the latter mode be adopted, it is necessary to determine *the proper diet, and the best mode of giving it.* Milk consists of cream and whey; and the whey, the greatest portion of which is water, is the only part that becomes sour. The quantity of cream is greatest in ewe's milk; next in that of woman, the goat, the cow; and then the ass and the mare. The proportion of whey is greater in the milk of mares and women than in that of the cow or sheep. The caseous part is greatest in the milk of sheep, the goat, the cow, the ass, the mare, in the order in which

they stand, and is little in that of woman. Sugar is abundant in the milk of the mare and woman, less in that of the goat, the sheep, and cow." After this statement, he concludes that asses' milk most nearly approaches the human, but as it is not easily procured, he selects cow's milk as the one to be used in rearing children by hand.

The cow's milk, he says, must be so changed as to lessen the proportion of curd and increase the sugar and cream, and he directs the cow's milk to be mixed "with an equal quantity of new made whey, a sixth part of cream, and a little sugar." Some, he says, dilute the milk with water-gruel. And Dr. James, in a foot-note, says: "A good substitute may be had in equal parts of barley water and fresh cow's milk, sweetened with good loaf-sugar.

Dr. D. Francis Condie, of Philadelphia, in his work on the Diseases of Children, in 1853, says: "Nature does not afford, nor can art supply, any substitute for the mother's milk, and to it, therefore, it should be entirely confined, when possible, until dentition has made some progress." And of the extreme danger of attempting to rear a child deprived of the mother's milk, he thus speaks: "In the asylums for foundlings and young infants, where feeding by the hand has been substituted for the natural nourishment, the mortality has been invariably most appalling; forty, sixty, and even as high as eighty and ninety per cent. being destroyed. Even in the domestic nursery, where the utmost care and attention are every moment bestowed, the task is a difficult one, and against the few instances in which it succeeds, we must place the very many in which it entirely fails." He then quotes from Dr. Merriman: "That the attempt to bring up children by hand proves fatal, in London, to at least seven out of eight of these miserable sufferers, and this happens whether the child has never taken the breast, or, having been suckled for three or four weeks, is then weaned." How fearful is this statement of Dr. Condee! Sixty to eighty per cent.—seven out of eight—lost! Can it be possible that such frightful mortality can not be averted by a better mode of feeding children? Dr. Condie directs "that milk should be taken from a healthy cow, and if possible from the same one; that the quantity of milk necessary should be *diluted with nearly an equal quantity of warm water*, and well sweetened with the best loaf-sugar. With this mixture the infant should be fed by means of a sucking bottle." Some directions in relation to keeping the bottle clean, and preventing acidity of milk, complete what he has to say on the subject.

Dr. Combe, in his excellent work on Infancy, edited by John Bell, M. D., in 1840, after referring to the constituents of different kinds of milk, says: "The most suitable nourishment for the new-born infant will be that which makes the nearest approach to the mother's milk. Cow's, goat's, or ass's milk *largely*

diluted with water, deserves the preference over every other kind of food. At first *two-thirds* of pure, fresh water should be added to one-third of cow's milk; but of goat's or ass's milk, *only an equal part* of water need be added. After a week or two the water may be only one-half, and afterwards one-third, at which proportion it should be retained for four or five months. This should be given at the same temperature as the mother's milk, 96° or 98° Fahrenheit." Of the quantity to be given at one time, he says: "As a general rule, six or eight table-spoonfulls will be quite sufficient at one time for the first two or three weeks."

Now, though Burns and Professor James in 1823 recommended that the milk be diluted "with an equal quantity of new-made whey, or an equal quantity of barley water;" and Dr. Condie, in 1853, directs that "the milk should be diluted with nearly an equal quantity of warm water;" and Dr. John Bell and Dr. Combe, in 1840, state that, "at first two-thirds of pure water should be added; after a week or two only one-half, and still later only one third, and this should be continued for several months;" yet so far back as 1833 Professor Dewees had, in his emphatic way, declared that "the proper substitute for the mother's milk was a mixture of two-thirds milk, one-third water, and a little loaf-sugar;" and in 1865, Dr. John Bell, in his admirable "Report on Physical Education," says: "At first the milk should be slightly diluted with water, with the addition of white sugar, and after a while be given in its natural state." Dr. Bell appears to have undergone quite a great change of opinion since 1840.

Some substitutes for cow's milk have been recommended, of which Liebig's artificial milk is perhaps best known. At a late meeting of the Academy of Medicine, in Paris, M. Giboust, Professor of the School of Pharmacy, after having reminded the assembly of the composition of this milk and the difficulties attending the preparation of it, in many places, added that "we have at our disposal a natural product which more nearly resembles human milk than does a mixture of cow's milk, flour, malt, lactate and butyrate of potassa. It is cow's milk itself. By taking the latter, and adding a little sugar and one-fifth by weight of water, we have an aliment at the disposal of everybody, forming a better substitute for human milk than any artificial compound." In Philadelphia, "Hard's Food" is somewhat popular. I have seen but one trial of it. It was a careful trial, made in summer time, and persisted in for months with ill success. The child was poorly for some months, and was speedily restored by being placed on a diet of cow's milk.

So much for the writers on the subject. During the last few years I have noticed that all our young men, graduates of the Medical Schools of Philadelphia, who come to practice in the country, and even those whom I have met who practice in cities,

invariably give the same advice to the mothers who consult them in relation to the proper mode of feeding children to be raised by hand. They all direct them to give one-third milk and two-thirds water. And they give the reason for adding the water, viz.: "The whole milk is too strong." Now where do they get this knowledge? Has it come down from the authors already named to the present teachers, and do they so instruct their pupils? That is the rational conclusion. It appears, then, that from the time of Burns, and probably from a much more remote period, this opinion, that cow's milk is too strong to be used without free dilution, has been handed down by writers and teachers with scarcely a doubt of its correctness. If we have made any progress in all this time, it has not been to lessen the dilution, but to increase it from one-half to two-thirds water; and with this the great body of the profession is satisfied; and yet in the very face of this treatment stands the appalling fact, that from "forty to eighty per cent.," "seven out of every eight" of the little creatures perish within a few months after their birth.

During a long and busy practice I have been enabled, I hope, to arrive at a better mode of feeding infants deprived of the mother's nourishment, and for the benefit of those who are just entering upon the duties of our profession, and who will be called upon for advice in this matter, I desire briefly to record my observations and experience.

Leaving to others the task of analyzing cows', goats', and asses' milk, to discover which approaches nearest to the human milk, in the proportions of its constituents; and selecting cows' milk as the one to be used, simply because it is more easily procured than the others, and not that I know it on any other account to be preferable, my remarks will apply only to it. In the early part of my practice, I gave the ordinary directions to those who inquired of me, namely, to give milk and water sweetened. Supposing the mother or nurse knew the proper quantity to be given in a day, I said nothing about that. And this neglect to speak of the quantity is, I think, very common with physicians. Thirty-two years ago, it became necessary to have my own child reared by hand, and I then discovered how ignorant I had been in relation to the *quantity of food* necessary for an infant, and was also enabled to observe the effects of an insufficient amount of food. Subsequent observations through many years have convinced me that there is not more than one woman in five, and perhaps not more than one in ten, who knows what amount of milk a child should have. Nor is there one physician in very many who can tell the mother or nurse what quantity it would need in twenty-four hours. I have repeatedly asked mothers and nurses and physicians, and it has been rarely that they have even approximated the truth. And this, because their attention had never been specially drawn to

it. One would say a teacupful; another, not quite so much; a third, rather more; a fourth, half a pint; and some, even as high as a pint, though they rarely named so much. And then, on being asked if they put water with the milk, they invariably replied, one-half water, or two-thirds water and one-third milk. Now, scarcely any child of one month will be satisfied with a pint daily; many will take a quart; the average is between them. But I do not mean that to this quantity twice as much water should be added, thus making nearly three quarts of fluid, for no child could take so much in twenty-four hours. Suppose, then, that a child can only take three half pints of fluid into its stomach in a day, and two half pints of it are water, it will then only get eight ounces of milk, when it needs twenty-four, or thirty-two ounces daily. There are two kinds of cases which I desire to notice. First, where the child receives no milk from the mother; second, where it gets a *little* from the mother, and *some* from the bottle; and the latter case is often more difficult to manage than the former.

Suppose, then, that, in a case of the first class, a child should only get less than a pint of the mixture (two-thirds water and one-third milk) daily; the result will be that the child will be hungry, peevish, fretful, will moan, start in sleep, emaciate, look pale, have acid stomach, colic, be considered sick, be dosed with medicine, get worse (for the food is still insufficient in quantity, and defective in quality), the physician be sent for, and, however judicious his advice or prescriptions, if he fail to furnish the proper food, death will carry off the little sufferer. Thousands suffer daily in this way in our State, and in cities as well as in the country. It is not uncommon to see a child who has been dosed for weeks with medicine by the mother, and often under direction of the physician, who, oblivious of the fact that it was suffering for want of food, prescribed a change of diet, or a diminution of its quantity, fearing that "the stomach was too weak to bear much food." Many children are thus starved and dosed to death. Let me describe a very common case, such as occurs to every physician. And here let me digress for a moment. Some years ago, I asked a physician if he had ever had a case of onanism. He replied that he had never seen one. I then narrated several of my cases, after hearing which he said, "Doctor, I must have had many cases of that disease, but did not recognize them at the time;" and, after pausing a moment, he resumed: "I can look back on cases now that died, and which could have been nothing else." So it is with us all. It is not till our attention is directed particularly to certain facts that we at all recognize their presence.

I hope, in describing these every-day cases of starvation in children, to recall to your minds many cases which you have seen, that will convince you that I know of what I affirm. Called to a child from one to five months old, I find it thin, pale, sad-

looking, moans much, not a scream, sharp and shrill, but a low, sad moan. It does not seem very sick, but the mother says she is "wearied out with it." If it be warm weather, there is diarrhœa, perhaps; or if cold weather, it may be very costive. Sometimes it is blue-looking, as in cyanosis. As I hear its history, and look upon its shriveled face, its thin arms, and hear its sad moan, I know that it is starving. I ask the mother if she has much milk for it, and find that she does not nurse it, but is raising it by hand. "How much do you give it daily?" "I give it as much as it will take." "Yes, but how much?" "Well, I don't know exactly how much." "Do you give it a teacupful in a day?" "I think I do—perhaps more than that." "Do you add water to the milk?" "Yes, two tablespoonfuls of water to one of milk." "Then, you mean to say that you gave your child one, or perhaps two teacupfuls of milk and water, not of milk alone?" "Yes, milk and water." Now, if this be a truthful statement, the child gets one third of two teacupfuls of milk daily, when it ought to have one or two quarts. The truth is, she does not know at all how much the child gets. I have often, after close questioning, discovered that the mother only bought one cent's worth in the morning, to last till next morning; sometimes one cent's worth in the morning, and one in the evening. Now, suppose such a child to go on from the point at which we found it. It will soon break out into sores over its arms, in its face, on its legs and body, and in this state the physician is generally called to prescribe for an "impure state of blood," and if his eyes are blind to the cause of all its woes, he will seek a remedy in medicine.

I will mention one of many similar cases. Some years ago I was called to a child which was thought to be laboring under disease of the heart. Its little pinched-up, old face (starving children have an aged look), the fat all gone, and the attenuated muscles standing out like strings when it cried, or whined, satisfied me that it was starving. "Why do you say it has disease of the heart?" I asked. "The doctor told me so," she replied. "Are you giving it medicine?" "No; we did give it some for a time, but we think it is incurable now." I examined its chest; the organs played healthfully. I told her it was starving; found she was giving it only a teacupful of milk, one-half water, in a whole day. It was two months old, and I have seldom seen so wasted a child. I directed a full diet of pure milk—a quart a day if it could take it—and it was quiet from the moment its stomach was well filled with good food, and in a short time was well, and growing finely. In two weeks from that time I was called to a neighbor's child, a little older and in a similar condition, supposed by the mother to be the result of a summer complaint which was troubling it. She had heard of the change produced in the other child by the change of food, and as she had also fed her child with the water and milk mix-

ture, she concluded that perhaps it too was suffering from an insufficient amount of food. Disregarding the bowel-complaint, I directed as much good milk as it could take, and in a few days it was well. Neither of these women had the least idea that a child could take more than about a half a pint of fluid in a day; both had added one-half water. A short time after this, I was called to a third child, more than a year old. It was a living skeleton, with numerous sores in various parts of the body. It had been sickly always, the mother said—gradually getting weaker. She had always fed it with milk and water, about half and half, though she had been told by the nurse who was with her the first month that it ought to be two-thirds water. It was apparent, after a careful investigation of the case, that it had been a case of slow starvation, which was now nearly over. It died next day. Cases like the three given are not rare. They are every day cases. They fill up the frightful list of from “forty to eighty per cent.”—they constitute the “seven out of eight cases of the miserable sufferers,” spoken of by Dr. Merriman. The mothers did not know that they were giving an insufficient quantity of food. They had asked the nurse, they had consulted the doctor, who had not told them what *quantity* to use, but had cautioned them not to give it too strong, and had directed two parts water and one part milk. They were impressed with the idea that cow’s milk was stronger than human milk, and therefore they might err by giving too much of it. I have often heard the fear expressed by mothers, that the milk was perhaps too strong for the child, even when they were giving this miserable water and milk mixture. Suppose that instead of using half a pint, or even a pint, a day of this water and milk, the mother should use a whole quart of it daily, even then the child would be most wretched. It would be weak and pale, sick and puny; restless night and day, wearing out the mother with its wretchedness. Its condition will now be attributed to disease, medicine administered, and the fate of the poor child sealed. In cases of this kind, vomiting is a frequent attendant, and as the thirst in such cases is greatly increased, cool water, if before used, is now withheld, under the impression that “water weakens the stomach,” and the suffering of the poor child is intense. Little children not only need plenty of good food, but even those who are fed at a full breast, also need occasionally a little cool water as drink.

But let us now look at the second class of cases, where the mother has *some* milk, but not enough for the child; we are not generally called to such children until they are over three months, often five or six months of age. Here we find, also, the symptoms of incipient starvation spoken of above, but generally milder in degree; and are asked to see it, not simply because the child is sickly and puny, for it has been so more or less for months, but because “it is broken out with sores.” To this I

would call your special attention. The starvation here long continued, has, as among prisoners of war long confined, produced a disease of skin, manifested by ulcers in various parts. On inquiry I find that "the child was as fine and healthy a babe when it was born as ever was seen, but that in a month or two it began to be puny, and it had been getting worse ever since, but she would not mind it so much if it were not for the sores. It is puny, but I do not know that it is sick; it was on account of the *sores* that I sent for you, Doctor." I ask, "Do you have milk for the child?" "Not enough, but I feed it *some*." "How much do you think you have?" "Oh! not much; but I feed it *some*." "Have you a pint a day?" "Oh! no, very little." "What do you feed it?" "Milk and water, sometimes pap or corn-starch." "How much of that?" "Well, more or less as it needs it." "How much in common?" "Perhaps half a teacupful, or a little more in a day, but sometimes it will not take it." Now this mother has no idea how much the child gets from the breast. She only knows that it gets very little, and yet at the age of this child, one well fed would take more than a quart and a pint of good milk daily, besides what the mother's breast yields. And this is a common case; not more than one mother in five would know any more about the proper quantity to be used than this one. The physician has not thought of this, perhaps, but is regarding the child as a sick one, not a starving one. He leaves the feeding to the mother; does not charge himself with that, but only with the disease which he has been called to cure. Now what prospect of relief for this child? It is starving, but the mother, not knowing this, sends for the doctor to cure it. It has a sickly appearance; is also full of sores. The mother tells him of its sufferings, and he, not suspecting the cause of the sores, perhaps deems them the *cause* of ill-health. His prescription, if he fails to give it food, but increases its weakness and suffering and hastens its death. Such a case occurred to me some time ago, and as like cases are frequent in every one's practice, I will give it. As I was passing through a house to see a child in a back room, a young mother asked me to see her child. It looked puny, fretted a good deal, and was blue-looking. I thought, at first glance, that it was a case of cyanosis. Said I, "What ails your child?" She replied, "The Doctor says it has a disease of the heart." "Have you a doctor attending it?" "No. He says it is of no use, and he has not been here for a week." I applied my ear to the chest and found all right there. On inquiring about food, she said she had very little milk for it, but she fed it *some*, and as usual that was water two-thirds and milk one-third. I directed her to get a bottle, and give it as much good milk as it could take, besides what she could furnish. There has been no trouble with it since, and it is growing finely. As a proof of how little is known on this subject by some women who have raised many children, I will give another case.

I attended Mrs. J— with her first child, a male, of usual size. Father and mother were very healthy and of healthy families. I did not see her again for fifty-six hours after delivery. Both grandmothers were then there, each of whom had raised nine children. One of them was holding the infant in her lap, and it seemed to me to be barely alive. Its face was shrunk and sharpened until it really seemed not half the size it was when born. There it lay still as death, its mouth closed, and the breathing scarcely perceptible. One of them said, "Doctor, our child is nearly gone." "Why! what is the cause? did it not suck well?" I inquired. "We did not put it to the breast; we were afraid it would strangle." Neither of these women were present when the child was born, but came next day; and the neighbor who had stayed until that time, went away when they came, but had not put the child to the breast, thinking it would be time enough when the grandmother or nurse should come. By this time the child was somewhat exhausted, and as the mother had not a supply of milk, the grandmothers waited for it to come. They had both been able to nurse their own children from the start, and to supply them well, and were unused to feed children. It was therefore a clear case of starvation, although the grandmothers did not so regard it. They thought it was a weak, puny child, that could not live. I asked them to bring milk and feed it. They protested against any attempt to give it food, asserting that it could be of no use, and would certainly strangle it. The milk was however procured, and as they would not feed it, I took the spoon and poured it down. They were greatly amazed that it did not die in my hands. They then gladly undertook to give it according to my directions. It soon began to recruit, and in a short time was a fine vigorous child, and is now a strong healthy boy of fourteen years. And here I desire to notice a fact, in relation to feeding children, which is worthy your attention. Look at young mothers feeding children by the spoon, and observe how slowly they dribble in the milk or gruel. They will place the spoon upon the lip and then pour it in, almost by drops; and if the child be very hungry, it will cry nearly all the time it is being fed. The food comes too slowly; it becomes impatient; it is annoyed by having to hold its mouth open so long before it gets enough to swallow. A child of two weeks of age can take milk as fast as you can dip it from a cup and put it into its mouth by a teaspoon.

I feel quite certain that it is almost as easy to raise children by hand, if they have an abundant supply of good undiluted cow's milk, as it is by the breast. But the bottle should always be used instead of the spoon. My plan is to direct as much milk as the child can take, and as often as it wants it; but always of the temperature nearly of the mother's milk. In winter time, or when milk is kept in a deep cave, or in a spring-house, I direct that as much boiling water be added to it as will

bring it to that temperature. It takes but very little water, and is more convenient than heating it over the fire. To a pint of cool milk two tablespoonfuls of boiling water should be added—the whole then well sweetened. A healthy child of one month will take that much twice in the twenty-four hours. Some children at one month, or between one and two months, will take more than a quart daily; and a few can scarcely take so much. If, then, you are called to such cases as I have described, or to those milder cases where the child is fed half enough, or even a little more than that, place no reliance on the word of the nurse, or mother, “that she feeds it plenty, or that it will not suck or eat, or cannot keep it down.” I have frequently seen a mother let the little hungry creature tug and pull at her flaccid, milkless breast, without being aware that the child got nothing from it; and yet she thought “it was getting suck.” In those cases hold back the medicine for a few days and try the milk. Those children who have been nursed, and fed a little by the spoon, will sometimes wholly refuse to take the bottle in lieu of the breast, and the mother takes it for evidence that they do not like the cow’s milk, and will therefore attempt to raise them on some one of the many farinaceous articles recommended, and in this she will be likely to fail. A little perseverance will generally induce them to take the bottle; and when once used to it, so that they can steady it in their own hands, they will rarely take too much.

I sincerely hope that our graduates, hereafter, will not go forth to practice, believing that the proper substitute for the mother’s milk is *a mixture of two-thirds water and one third cow’s milk*. Rather let them be instructed that the higher the organization of the animal, the more abundant will be the nutritive constituents of the milk, and as man is at the head of the animal creation, human milk is more highly organized than that of any other animal. If, then, you wish to use any other milk as a substitute for the mother’s, instead of diluting it with water, it would seem to be more appropriate to add to it some nutritive substance. I have never used for infants any other milk than that of cows; asses’ and goats’ milk is not easily procured. Baron Liebig’s soup is probably very good, for, to five ounces of good milk he adds half an ounce of wheaten flour, half an ounce of malt flour, and seven grains and a quarter of cream of tartar, dissolved in one ounce of water. This is to be put on a gentle fire, and when it begins to thicken it is removed from the fire, stirred for five minutes, heated and stirred again until it becomes quite fluid, and finally made to boil. Separate the bran by a sieve, and it is fit to use. But how inconvenient for the poor to procure those ingredients and prepare them for the child every time that it needs food! Where milk cannot be procured, farinaceous substances may be used; but milk is better and more convenient. I feel that some physicians who

practice among the higher classes of society will regard these observations as having no reference to *their* patients, but refer wholly to the neglected children of the poor. It would be fortunate if it were so; but who has not seen the poor little emaciated child of rich parents, dragged about in its little coach by the nurse, or lying on her lap on a cushion, as the large carriage rolled along to give it an airing, by direction of the physician, whose very precise directions had been to feed it every four hours, two-thirds water and one-third milk? Day after day, week after week, has he not visited and prescribed (not for the starvation), but to improve its nutrition, to relieve its colics, to correct its sourness of stomach, to regulate its bowels, or, to sum it all up in one common phrase, "to build it up?" Did he succeed? No. Under the impression that the child's stomach was weak, not able to take much food, the quantity of food was diminished, a little lime-water, mint-water, or some other "corrective" added, and the little starving sufferer, never ceasing its low and plaintive moan, gradually passed away for ever. This is starvation in the midst of plenty. Starvation by prescription. There is little difficulty in raising children by hand, if they are allowed a full supply of good milk. A great many struggle along on even half the proper quantity. But they are weak, thin, and of small growth. Children who are fed on the water and milk mixture are sometimes saved by a habit which prevails among the poor, of giving it, while the mother is eating, small bits of bread or biscuit soaked in coffee, or with molasses or sugar on it. Thus, very soon, the little hungry thing becomes clamorous for it, and the mother, in order to keep it quiet, will soon give it quite a slice of bread, or a small biscuit to suck at. Children of a few months will sometimes thus be saved.

How common it is to hear a mother say, "My child is getting very hearty now; but until it was nearly a year old it was very puny; I thought I would lose it." It was puny for the want of food; it was starved on water and milk; but, when it got old enough "to sit up at the table, and get a little of anything," it began to improve, and yet the mother did not perceive the cause of the change.

I do not know that I can illustrate this subject better than by showing the effects of different amounts of food on young brute animals. Observe a litter of pigs when only two days old, and you will be surprised to see how closely they resemble each other in size. But look at them again in ten days. There are ten of them—all the nipples are occupied. The four which are at the front and back teats, but especially those at the back teats, are decidedly smaller than those broad-backed, plump fellows which are gorging themselves at the middle ones; and one of these is less than the others; he is, indeed, already called "the runt." See him in two weeks more, or when they are four

weeks old, the common time for selling them; while the others will bring five dollars apiece, he will not bring two; indeed, it is common to give him to some poor man who hopes, by great care, to make something out of him. In another month see him again. He has been well fed on milk, or milk and bran, as much as he could eat, and now you would not recognize, in the clean, comfortable, lazy shoat, with his white skin and well curled tail, the yellow-haired, scurfy, puny, thick-legged, stiff-tailed runt of a month ago. An abundant supply of food, though it was not the *mother's* milk, has "built him up," even without the aid of whisky, the now highly lauded nutriment.

Now mark the terms I have used in describing the half-fed pig—yellow-haired, scurfy, thick-legged, stiff-tailed. The other pigs are white and clean; their tails are limber and curled, and their legs smooth and supple; but he is yellow as though the hair were dirty, his skin is covered with a dark scurf, which reaches to the very feet, and thickly covering the tail to its very extremity, causes it to stand out almost in a straight line with his backbone. No washing will have much effect upon him until you increase his food. If you give him plenty of food, he will get well, even without washing; if you do not, he will struggle on like a starving, half-fed child, and die. If, then, in the country, where the milk is good, a child of a month needs nearly a quart daily, without dilution, how very important that no water shall be added to the milk brought to the city by milkmen! It is not too much to say that before it reaches the citizen's door it is only two-thirds milk. Now, should the doctor direct that the milk should be diluted by adding one-half water, you can see that the food of the child will be four parts milk and five parts water—a starving mixture even if given in full quantity. Add to this the fact that much of the milk taken to the cities is of indifferent quality, and the difficulty of rearing children there, by hand, will be apparent. But much of the danger may be averted by giving the milk without the addition of any diluent, and by adding, when the child's age will allow it, some farinaceous substance. I have just heard of a case in a rich, fashionable family, the recording of which may be instructive. The child is fed on what may be called corn-meal tea, or soup. The corn-meal is boiled very thoroughly; the water then strained off, and a little milk or cream added, about as people use it in tea or coffee; and this is all the poor child gets. It is now a year old, weak, pale, fretful, unable, even when held up, to stand on its limbs, presenting a pitiable picture of suffering caused by want of food, under the physician's direction.

I have but merely glanced at this subject. My object has been simply to call attention to the fact that many thousands of the children who annually die prematurely, die from want of food. They are starved to death, and we are not blameless.

